

CLAIMS

What is claimed is:

1. An apparatus for supporting a dial test indicator in a tooling machine, said apparatus comprising:

at least a pair of pivoting arms being positioned parallel to one another for unison operation; each of said pivoting arms including a distal end and a proximal end, with each of said ends including an aperture extending therethrough;

first and second pivoting ends, each having at least a pair of pivoting flanges projecting therefrom, each of said pivoting flanges having an aperture extending therethrough alignable with said apertures of said proximal and distal ends, respectively and;

means for pivotally attaching said pivoting flanges of said first and second pivoting ends with that of said distal and proximal ends of said pivoting arms;

means for attaching said first pivoting end to a tooling machine; and

~~means for pivotal attachment of a dovetail to said second pivoting end.~~

2. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein each of said pivoting arms are formed in an elongated configuration and further comprise a pivoting slot located at said distal and proximal ends, said pivoting slot being geometrically configured to slideably accept said pivoting flange thereinbetween.

3. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein said attachment means comprises a mounting shank having a cylindrical configuration to adaptably fit within the space defined by a spindle of the tooling machine.

4. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein said first and second pivoting ends each include a cylindrical space bored to a predetermined depth.

5. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein each of said pivoting arms further comprise a plurality of apertures extending therethrough for reduction of weight thereof.

6. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein said dovetail attachment means comprises a pivoting stem formed in a cylindrical configuration at one end of which is fixedly attached to said second pivoting end and a second end having a geometric configuration corresponding to the geometric configuration of said dovetail and a threaded aperture extending therethrough for passage of a thumb screw.

67. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein said dovetail is formed in a cylindrical configuration and further comprises a longitudinal bore having a space defined by the length and diameter of the mounting shank of the dial test indicator, a slot transversing said dovetail and extending the length of said longitudinal bore, a first threaded aperture extending through said dovetail, perpendicular to said longitudinal bore, for passage of a dovetail setscrew to tightly secure the mounting shank of the dial test indicator to said dovetail, and a second threaded aperture extending through said dovetail, perpendicular to said longitudinal bore and parallel to said first threaded aperture, for passage of a thumb screw for pivotal attachment of said dovetail.

78. An apparatus for supporting a dial test indicator as set forth in claim 1, wherein said pivoting end attachment means comprises a pivoting screw extending through said alignable apertures of said distal and proximal ends and said first and second pivoting ends, respectively, a pair of washers slideably fitted on said pivoting screw, between said pivoting end and said distal and proximal ends to promote slideable pivotal movement of said pivoting arms about said pivoting screw, and a pivoting nut threadably engaged to the end of said pivoting screw to tighteningly secure said pivoting arms to said pivoting ends.

89. A method of supporting a dial test indicator in a tooling machine for operation on a workpiece, said method comprising the steps of:

002280-032200-09643376

providing a dial indicator support having at least a pair of pivoting arms each having a distal end and a proximal end, with each end having an aperture extending therethrough and a pivoting slot, said pivoting arms being positioned parallel to one another for operation in unison, first and second pivoting ends each having at least a pair of pivoting flanges, each of said flanges including an aperture extending therethrough alignable with said apertures of said distal and proximal ends and having a geometric configuration to slideably fit within said pivoting slot, said pivoting flanges further comprising a cylindrical space extending therein to a predetermined depth, means for pivotally attaching said flanges of said first and second pivoting ends with that of said distal and proximal ends of said pivoting arms; a mounting shank having cylindrical configuration and being adaptably fitted within said cylindrical space of said first pivoting end; and a pivoting stem having a first end and a second end, said first end including an aperture extending therethrough for passage of a thumb screw to tighteningly secure a dovetail thereto, said second end having a cylindrical configuration and being adaptably fitted within cylindrical space of said second pivoting end; inserting said mounting shank within a spindle of the tooling machine; attaching a dial test indicator to said dovetail; selectively positioning said pivoting arms and said dovetail near the workpiece; and manually tightening said thumb screw to secure said dovetail in a stationary position.

9 10. A method of supporting a dial test indicator in a tooling machine for operation on a workpiece as set forth in claim 9, wherein said dovetail further comprises a longitudinal bore having a space defined by the diameter and length of a dial test indicator mounting shank, a slot transversing said dovetail and extending the length of said longitudinal bore, and a threaded aperture extending therethrough, perpendicular to the longitudinal axis of said dovetail, for passage of a dovetail setscrew to tighteningly secure the dial test indicator to said dovetail.

1011. A method of supporting a dial test indicator in a tooling machine for operation on a workpiece as set forth in claim 9, wherein said dovetail further includes an end having an inverted v-shaped groove of which is capable of accepting a dial test indicator equipped with a dovetail-tongued mount.

5 11 12. An apparatus for supporting a dial test indicator in a tooling machine, said apparatus comprising:

at least a pair of pivoting arms each having a distal end and a proximal end and comprising a pivoting slot located at said distal and proximal ends, said ends including a an aperture extending therethrough to permit passage of a pivoting screw;

10 first and second pivoting ends, each having a cylindrical space bored to a predetermined depth and at least a pair of pivoting flanges each having an aperture extending therethrough alignable with said apertures of said distal and proximal ends, said pivoting ends being geometrically configured to slideably fit within said pivoting slot;

15 a mounting shank having two ends, one such end having a cylindrical configuration which is adaptably fitted within the space defined by a spindle of a tooling machine and a second end which is adaptably fitted within said cylindrical space of said first pivoting end;

20 a pivoting stem having a threaded aperture at one end and a second end which is adaptably fitted within said cylindrical space of said second pivoting end;

a plurality of pivoting nuts threadably engaged to each of said pivoting screws to tighteningly secure said pivoting arms to said pivoting ends; and

25 a dovetail having a cylindrical configuration with one end having a first threaded aperture extending therethrough alignable with said aperture of said pivoting stem for passage of a thumb screw to permit pivotal movement of said dovetail thereabout and a second end having an inverted v-shaped groove therein capable of accepting a dovetail-tongued mount.

11 1213. An apparatus for supporting a dial test indicator as set forth in claim 12, wherein said pivoting screw is fitted with a pair of washers of which are located on each

side of said pivoting flange to promote slideable movement of pivoting arms and pivoting flanges about said pivoting screw.

1314. ³ An apparatus for supporting a dial test indicator as set forth in claim 12,¹¹ wherein said dovetail further comprises a longitudinal bore having a space defined by the diameter and length of the mounting shank of the dial test indicator and a slot transversing said dovetail and extending the length of said longitudinal bore.

1415. ¹⁴ An apparatus for supporting a dial test indicator as set forth in claim 12,¹¹ wherein said dovetail further comprises a second threaded aperture parallel to said first threaded aperture of said dovetail and located approximately two-thirds the distance from the end of said dovetail comprising said thumb screw.

1516. ¹⁴ An apparatus for supporting a dial test indicator as set forth in claim 15,¹¹ wherein said second threaded aperture is geometrically configured to accept a dovetail setscrew having a head that is knurled to permit finger rotation thereof and a depression that is hexagonal in shape to accept a wrench of similar configuration.

1617. ¹¹ An apparatus for supporting a dial test indicator as set forth in claim 12,¹¹ wherein said pivoting stem is adaptably fitted with a belleville spring having an arcuate-shaped profile, said spring being situated between the head of said thumb screw and the end of said pivoting stem having said aperture extending therethrough, whereby said spring provides adequate pressure against said thumb screw to restrict inadvertent movement thereof while allowing secure, pivotal movement of said dovetail about said thumb screw.

1718. ¹¹ An apparatus for supporting a dial test indicator as set forth in claim 12,¹¹ wherein said pivoting stem end comprising said aperture is geometrically flat on one side and curved on the opposite side of which configuration adaptably corresponds to the geometric configuration of said dovetail end comprising said first threaded aperture.

1819. ¹¹ An apparatus for supporting a dial test indicator as set forth in claim 12,¹¹ wherein each pivoting screw is adaptably fitted with a wave washer having a wave-like profile, said wave washer being geometrically configured to fit between said pivoting nut and said pivoting arm to prevent inadvertent rotation of said pivoting nut.

¹⁹
20. An apparatus for supporting a dial test indicator as set forth in claim ~~12~~, ^{1A} wherein said aperture of said distal and proximal ends includes a portion thereof that is depressed to the extent of accommodating the geometric configuration of said pivoting screw head.

5

10

09164337
45
002280
082200

20

25